

AMERICAN SOCIETY FOR TESTING MATERIALS



~ BULLETIN ~

ENGINEERS' CLUB BUILDING.

1315 SPRUCE ST.

PHILADELPHIA, PA.

NUMBER 8

JANUARY 31, 1923

1923 Annual Meeting

The Twenty-sixth Annual Meeting of the Society will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., during the week of June 25, 1923. Monday (June 25) will probably be devoted to committee meetings as in the past, and the meeting will close either Friday evening, or Saturday morning, June 30.

The decision to return to the Chalfonte-Haddon Hall for the 1923 meeting was made after careful deliberation. The meeting last year at the same hotel was in every way successful, and the hotel management has assured us that every facility for the pleasure and comfort of our members and for the success of the meeting will again be available.

Rates.—Chalfonte-Haddon Hall is operated entirely on the American plan. Special rates for members and their guests are announced below:

	Per Day.
Rooms with Private Bath.	
Room occupied by one person.....	\$10.00
Room occupied by two persons.....	\$13.00 to 18.00
Rooms with Running Water.	
Room occupied by one person.....	\$6.00 to 8.00
Room occupied by two persons.....	\$12.00 to 14.00

Reservations.—Members who desire may reserve their accommodations now by addressing the hotel management. It is believed, however, that most members will wish to defer making the reservations until the program of the meeting has been distributed. A provisional program will be mailed about the end of April and further details will be announced in the next BULLETIN.

The members will recall that each hotel has its own dining room service, so that members who wish to take their meals together regularly should be sure to secure reservations in the same hotel. At our request and through the courtesy of the hotel management, arrangements will be made if possible by which members may at times, and by arrangement in advance, take their meals in either dining room. Obviously this can be done only to a limited degree.

Entertainment.—Plans for the entertainment of the members and their guests will be announced later. The Golf and Tennis Tournaments will be held as usual on the afternoon reserved for recreation, and other entertainment features will be arranged by the Entertainment Committee.

Work on Program Started

The Committee on Papers has begun work on the development of the program of the annual meeting. The meeting last year was productive of a large number of valuable reports, papers and discussions, and the program in view for the 1923 meeting gives every promise of being quite as distinctive. Through Circular No. 173, January 1, 1923, the aid of the membership was invited in the development of the program and offers of papers or suggestions on any subject relating to engineering materials will be received up to February 15, 1923. A number of such offers and suggestions have already been received, and the committee will appreciate the cooperation of all members.

Although it is too early to make any announcement in detail, a number of very promising topics for discussion are being developed. The discussion of 1922 on "The Fatigue of Metals" will be continued through the presentation of papers giving important new data. Plans are under consideration for a discussion of the qualities of concrete that need be studied in connection with the demands now made upon it in its many fields of use. Several papers on testing apparatus are in prospect, including a description of a device for the accurate measurement of impact forces. Other topics are the physical and metallurgical properties of coke; manufacture, application and tests of insulating varnishes; abrasion of rubber compounds; and papers in the fields of paints, oils and road materials. Suggestions of new topics for discussion include the subjects of slate and glue. It is expected to show in the session on road materials a motion picture of the test work of the Bureau of Public Roads at the Arlington Farms, Washington, D. C.

Offers of Papers
for the Annual Meeting
must be submitted not later than
February 15, 1923.

Use the Return Blank mailed to
Members January 1, and submit
a Summary with the offer.

Distribution of Preprints

The new plan of distributing preprints of reports and papers, announced to the members last year, will be put in effect. Following the distribution of the provisional program in April, each member will be asked to indicate on a suitable return blank which committee reports and papers he desires to receive, and preprints will be distributed only to those members who request them. As in the past, all members attending the annual meeting will receive, as they register, a complete set of preprints of reports and papers available.

American Engineering Standards Committee

The U. S. Department of Labor and the National Association of Manufacturers have been recently elected to membership on the American Engineering Standards Committee.

A.S.T.M. Standards Approved.—The following A.S.T.M. Standards have recently been approved as Tentative American Standard: Standard Methods of Test for Penetration of Bituminous Road Materials, of Chemical Analysis of Alloys of Lead, Tin, Antimony and Copper, and of Laboratory Sampling and Analysis of Coke. The Society has been designated as sponsor for a number of standards, including those for Automatic Screw Stock, Soft Copper Wire, Copper Wire Bars, Chemical Analysis of Alloys of Tin, Lead, Antimony and Copper, Battery Assay of Copper, Sampling Coal, and Laboratory Sampling and Analysis of Coke; and as joint sponsor with the U. S. Bureau of Public Roads and the American Association of State Highway Officials for the Method of Test for Penetration of Bituminous Materials.

Sectional Committee on Shafting.—The Society's representatives on this Sectional Committee, F. M. Waring and J. J. Shuman, have prepared a questionnaire to secure data relating to the chemical properties of steels used for shafting and the physical properties as affected by the various methods of manufacture. The questionnaire will be sent by the Sectional Committee to the makers of transmission and machinery shafting. The data will be of value to Committee A-1 on Steel in the consideration of specifications for shafting.

Numbering of Steels.—As the result of a representative conference on numbering of steels held in Washington on December 6, our Society and the Society of Automotive Engineers have accepted the invitation of the Standards Committee to be joint sponsors for "the development of a numbering system for forging, casting and structural steels, including plates, but not including tool steels, the numbering system to be based on definite specifications."

Sectional Committee on Testing Wood Organized

The Sectional Committee on Methods of Testing Wood was formally organized under the joint sponsorship of the A.S.T.M. and the U. S. Forest Service at a meeting in Washington on December 13, 1922. L. J. Markwardt, representing the U. S. Forest Service, was elected chairman, and M. O. Withey, representing the A.S.T.M., secretary. The Society offered for consideration the A.S.T.M. Tentative Methods of Testing Small Clear Specimens of Timber, and it was voted to receive these methods and to study them as the first problem of the committee. The scope of the committee's activities was defined as follows:

The scope of the committee's activities embraces the standardization of methods of physical (including mechanical) tests of wood. The most important desideratum involved is the establishment of standard practice in testing wood which will make data obtained at different sources of the broadest possible value and insure the attainment of comparable results. Of immediate importance is the application of these methods to (a) small clear specimens, and (b) structural sizes.

The committee will not formulate methods of test of articles manufactured of or fabricated from wood, such as boxes, barrels, axe handles, wooden trusses, etc., except as may be necessary in the study of tests to determine physical properties of wood.

Two sub-committees were appointed, one to assemble data relating to testing of small clear specimens and to secure criticisms and comments of the A.S.T.M. Methods, and the second to secure similar data relating to the testing of structural sizes of timbers. The committee will hold its next meeting at the Forest Products Laboratory, Madison, Wis., to consider the reports of these two sub-committees.

Industrial Standardization During 1922

The following has been abstracted from a statement recently issued by A. W. Whitney, chairman of the American Engineering Standards Committee:

The year 1922 has seen greater activity in industrial standardization than any other year in the history of American industry. Notable progress was made in standardization of materials, manufacturing processes, and finished products by individual firms, by industrial and technical associations and by bodies working on national and international lines.

One of the most far-reaching accomplishments of the year was the organization, on a working basis, of the Federal Specifications Board which develops and approves the specifications under which all government purchases are made, and the development of a plan of cooperation between this Board and the American Engineering Standards Committee. The organization of Secretary Hoover's Division of Simplified Practice and its entrance into industrial fields has had a highly stimulating effect and has helped in particular to press home to the business man that standardization is one of the main approaches to efficiency and the elimination of waste.

Great advances have been made by industry itself on the more technical side. More than 120 standardization undertakings now have an official status before the American Engineering Standards Committee, 43 of them having been initiated within the last year; this is an increase of more than 50 per cent. Six safety codes, pointing the way to the elimination of the most serious classes of industrial accidents, were approved during the year. The year 1922 saw also the development of an increased interest in industrial standardization and an increased appreciation of its effect on production efficiency, distribution of costs, and consumer demand. It is highly desirable that such cooperation should be maintained if American industry is to be given the commercial advantages which will correspond to those that are being developed through standardization in Germany and England and other foreign countries. Important developments took place in international standardization. There are now national standardization bodies in 15 foreign countries and plans are under way for the development of such work in the South American republics.

Lumber Standardization Progressing

Standardization in the lumber industry, which led to the appointment of the Central Committee on Lumber Standards announced in the last issue of the BULLETIN, has progressed rapidly in the last three months. A report of the Central Committee issued in October contains a number of specific suggestions for lumber standardization, comprising grading simplification, size standardization and certification of quality and quantity. Suggested basic grading rules for yard lumber and structural timbers, based on rules proposed by the U. S. Forest Products Laboratory, are being very generally discussed, and the Society's Committee D-7 on Timber is now, through its appropriate sub-committees, comparing these rules with the A.S.T.M. standards.

For the purpose of maintaining closer contact with national bodies interested in lumber standardization, and to secure technical advice from all available sources, there has been created a Consulting Committee to the Central Committee on Lumber Standards, consisting of representatives of such national organizations. Hermann von Schrenk, chairman of Committee D-7, A. F. Robinson and C. C. Warne are the Society's representatives on the Consulting Committee, and Mr. von Schrenk has been appointed chairman of the Engineering and Technical Group.

A joint meeting of the Central Committee and its Consulting Committee was held December 15, 1922, and the second meeting is scheduled for February 5.

Tests of Welded Pressure Vessels

The Division of Engineering, National Research Council, has recently reported upon an investigation that will interest many members of the Society.

One of the many difficult problems confronting the Boiler Code Committee of the American Society of Mechanical Engineers in its effort to draw up satisfactory codes governing the construction of unfired pressure vessels was that of welding. Rules applicable to riveted constructions do not always apply to fabrication by welding. The problem is seriously complicated because of the meagerness of scientific data upon which to base proper requirements for safety without placing unjust restrictions on the use of welding.

A hydrostatic and hammer test was finally proposed for determining whether a vessel was safe for the purpose designed. The American Bureau of Welding, which is the advisory committee on welding research for the American Welding Society and the National Research Council, organized a Pressure Vessel Committee under the chairmanship of H. L. Whittemore of the U. S. Bureau of Standards to cooperate with the Boiler Code Committee in determining the adequacy of the test proposed. Eight manufacturers placed at the disposal of the committee some forty tanks and enough funds. These tanks have been tested to destruction by the U. S. Bureau of Standards. The shells of most of the tanks were 6 ft. long and 2 ft. in diameter, and made of $\frac{3}{8}$ -in. mild steel plate. Both electric and oxy-acetylene welding were used. The hydrostatic and hammer test developed that the welded pressure vessel, according to the regular formulas for working pressure, has a factor of safety of about six. A report is being compiled and will soon be published.

Highway Research Board Meets

The Advisory Board on Highway Research of the Division of Engineering, National Research Council, held its second annual meeting on November 23-24, 1922. Reports of substantial progress were received from committees on Economic Theory of Highway Improvement, Structural Design of Roads, Character and Use of Road Materials, Traffic Analysis, Finance, and Maintenance. The report of the Director, W. K. Hatt, laid particular emphasis upon problems in highway engineering that remain to be solved and the economic possibilities of organized research. The comprehensive national program for highway research has stimulated research in the fields of highway transport and automotive engineering. A useful function has been performed in the collection and distribution of completed and current research data. The report reviews development of instruments, service tests, tractive resistance of roads, tests of vehicle performance, traffic studies, economics of location, and materials.

The Society is represented on the Advisory Board by Prévost Hubbard with A. N. Johnson, alternate. C. S. Reeve, appointed from Committee D-4, is a member of the Committee on Character and Use of Road Materials.

A.S.T.M. Specifications for Pig Iron to be Discussed

Arrangements have been made at the request of Committee A-3 on Cast Iron to have the Society's Tentative Specifications for Foundry Pig Iron discussed at the annual meeting of the American Institute of Mining and Metallurgical Engineers, New York City, February 21. The Society has reprinted from the PROCEEDINGS and bound in pamphlet form for this meeting the Tentative Specifications, the papers by William R. Webster and Richard Moldenke on the Physics of Cast Iron, and the extended discussion at our annual meeting. The discussion at the A.I.M.E. meeting will be opened by Mr. Moldenke, chairman of Committee A-3. The members of the A.S.T.M. committees interested have been invited to participate in this discussion, and it is hoped also to have representative blast-furnace men comment upon the requirements in the specifications.

Advisory Committee on Non-Ferrous Metals

The Advisory Committee on Non-Ferrous Metals of the U. S. Bureau of Standards, on which the Society is represented by W. H. Bassett, William Campbell, G. H. Clamer, N. K. B. Patch and W. R. Webster, held its regular fall meeting at the Bureau of Standards on October 31, 1922. Fifteen members of the committee were present, together with twelve representatives of the Metals Committee of the Federal Specifications Board and twelve representatives of the U. S. Bureau of Standards. The principal item of business was the discussion of proposed specifications for non-ferrous metals and alloys of the Federal Specifications Board. These discussions were very helpful and it was the consensus of opinion that they should be continued at later meetings of the committee.

Attention was called to the revision of Circular No. 101 on the Mechanical Properties of Metals and Alloys. The compression test specimen was discussed at some length, as well as methods of sampling for commercial practice. No new standard chemical samples were ready for distribution. Further work on bearing metals was reported, the present work being a study of the effect of impurities on the mechanical properties of a lead-base bearing alloy approximating Alloy No. 7 of the Tentative Specifications for White Metal Bearing Alloys (B 23-18 T) of the American Society for Testing Materials. Some large crystals of various metals were exhibited and an interesting report was made of the work on molding sand. Attention was called to the publication of Scientific Paper No. 435, on "Spectroscopic Methods," and a short discussion was entered into on the problems surrounding the electro-deposition of nickel. As usual, the committee inspected the various departments of the Bureau at the conclusion of the meeting.

Studies by U. S. Bureau of Standards

Among the many interesting investigations by the U. S. Bureau of Standards announced in their Technical News Bulletins, two will be of particular interest to our members:

Scientific Paper No. 453 of the Bureau, which may be obtained from the Superintendent of Documents at Washington, describes an investigation of the preparation and properties of pure iron alloys. The purpose is to determine the exact effects of the several constituent elements that are alloyed with iron to produce steel. Iron of practically 100-per-cent purity was prepared by an electrical method similar to the method of silver plating. The iron was electrically melted in a vacuum to exclude the effects of gases, the containing crucibles being of chemically pure magnesium oxide. Extensive series of alloys, including the entire range of compositions found in ordinary steels, were made by remelting the iron and adding carbon and manganese. Specimens from these ingots were tested and the results compared so as to bring out the effects of each element.

An investigation of the fire-resistance and related physical properties of hollow building tile is being conducted in cooperation with the Hollow Building Tile Association. Tests of unprotected panels built from tile of representative clays have been made in suitable furnaces in order to establish the characteristic behavior under fire. A wide range in fire resistance was found, depending mainly on the mineral composition of the clays employed. The protection afforded by typical plasters has been determined, obtaining, generally, excellent results. The effect of the addition of combustible filler to the raw material, of the fineness of grinding of raw material, of the size of the unit and of changes in design of the tile, will be ascertained. In conjunction with the fire tests, determinations of the absorption, compressive strength, expansion, mineralogical composition, and ability to withstand freezing are being made.

The investigation on hollow tile is of particular interest to our Committee C-10 on Hollow Building Tile, for the results of the tests that are being made will have considerable influence upon the revision of the Tentative Specifications for Hollow Building Tile that have been prepared by the committee.

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by the

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Engineers' Club Building, 1315 Spruce St., Philadelphia, Pa.

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Number 8

January 31, 1923

Vigorous Program for Increase of Society Membership is Launched

The Program for Increase of Society Membership, forecast in the October BULLETIN, has been completely formulated by the Membership Committee, consisting of Past-President C. D. Young, chairman, F. M. Farmer, W. K. Hatt and the Secretary-Treasurer. It has for its object the establishment of the best means for steadily maintaining a healthy influx of new members interested in the Society's work and desirous of supporting it through membership.

Each standing committee has been asked to secure new members, and to organize a Sub-Committee on Increase of Society Membership to plan and direct the work of the committee. Between now and the Annual Meeting each committee will, at a meeting, give some consideration to this subject. The committees of the Society have been selected as the nucleus of this program because they are in intimate touch with the industries of the country, are permanently organized and therefore can carry out the Program upon a permanent functioning basis.

The next step is to secure the interest and support of **EVERY MEMBER**, whether serving on a standing committee or not. We believe every member takes a pride in the high standing of the Society, in the value of its publications, and in the service it renders in the formulation of standards for engineering materials; and will, therefore, wish to support a movement that relates so closely to the continued usefulness and vitality of the Society. Following are some pertinent facts which show the importance of increasing our membership.

Some Facts to be Considered

1. *The net growth of membership has markedly decreased in the past two years.* These decreases are due both to decreased number of new members and to increased number of resignations and of delinquent members dropped from the rolls. Business conditions, we believe, explain in a degree these losses.

2. *The costs of conducting the Society's activities have greatly increased.* About 55 per cent of the disbursements for 1922 were for the mechanical costs of publications, that is, exclusive of all overhead expenses. Our printing in 1922 cost 60 per cent more, page for page, than it did in 1916, the last normal year in the printing industry.

3. *These greatly increased expenses have been met from increased receipts from sales of publications,* which alone have enabled the Society to continue its work with no serious curtailment.

4. However, receipts from sales of publications cannot reasonably be expected to continue increasing at the present rate. The two principal sources of income are dues and sales of publications. There are no indications of an immediate reduction in printing costs. **Therefore, the increased funds necessary in order that Society activities may expand as in the past must come from membership dues.**

The Executive Committee is definitely of the opinion that an increase in the dues is unwise, and never more so than at the present time. It is a fundamentally sounder policy to secure the necessary increased revenue through increased membership.

The publication requirements are necessarily increasing; our committees and members bring us each year more and more material of value to be published, and inability to publish it would be an indication of failure to measure up to our possibilities. New committees need to be organized, and further financial support of committee activities is desirable, especially of researches undertaken for the advancement of knowledge in our particular field.

Each Member Can Help

The Membership Committee would like to feel that each member will take an interest in this Program for Increase of Society Membership, and lose no opportunity that presents itself of securing at least **ONE NEW MEMBER** in 1923. The membership of the Society (3103 on December 31, 1922) does not by any means include all who are concerned with the production, use or testing of engineering materials and who would benefit from membership in the Society. The industrial classification of our membership, printed in the October BULLETIN, is convincing evidence of the possibility of extending the Society membership in many industries. In the aggregate, our membership affords tremendous possibilities for increasing the strength and prestige and extending the usefulness of the Society by increased membership. The members have not failed in the past to respond to similar appeals, and we are confident they will respond to this one.

An Improved Form of Application Blank

An improved form of application blank for membership is enclosed. It contains considerable information about the Society and the advantages of membership that can conveniently be referred to. **Each member is asked to use this application blank in securing a new member.** The Secretary-Treasurer is ready to give further information about any specific phase of our work to any one whom our members might suggest, and to cooperate with the members in every way possible.

The Time is Opportune

The months prior to our meeting in June are the best ones in which to secure new members—the meeting and preprints of reports and papers are an incentive to membership. Your best efforts should therefore be made in the next few months.

500 NEW MEMBERS IN 1923

We nearly reached this goal in 1920. By organized efforts we can pass it in 1923. **EVERY MEMBER HELP.**

New Members, October 1-December 31

Fifty-four new members were elected from October 1 to December 31, 1922, as follows:

American Malleable Castings Association	McClellan and Junkersfeld, Inc.
American Zinc Institute, Inc.	McKay, R. J.
Araki, G.	Merriman, T.
Beggs, G. E.	Midtskang, H. N.
Benham, W. L.	Moore, F. G.
British Cast Iron Research Association	National Tent and Awning Manufacturers' Association
Carey Co., The Philip	Nebashi, Teiji
Comp. Siderurgica del Mediterraneo	Olsen, O. M.
Cook, E. C.	Riek, F. O.
Ehn, E. W.	Ruhling, Holdsworth and Hudson
Empire Laboratory Supply Co., Inc.	Schlueter, W. A.
Fairchild, I. J.	Shima, Yasujiro
Freyberg, W. O.	Sonoda, S.
Gibbs, R. S.	Tagliabue Manufacturing Co., C. J.
Gravell, W. H.	Takemura, K.
Heppenstall Forge Co.	Tardy, A.
Hergenroether, E. J.	Temple, C. H.
Highway Department, Oklahoma School of Mines	Towne, H. E.
Hogg, Robert	Trinham, J. S.
Johnson and Johnson	Ulmer, C. D.
Kandos Cement Co., Ltd.	Underhill, C. R.
Keeney, O. P.	University of Georgia
Kuhn, F. H.	University of Maine, College of Technology
Kuntz, W. J.	University of Notre Dame Library
Ledoux Jennings, Ltd.	Werner, T. O.
Maki, Hikoshichi	Whitmore, W. F.
Marland Refining Co.	Wilhelm, W. C.

Deceased Members

We announce with regret the death of five members:

E. G. BASHORE, Shippensburg, Pa. Died October 25, 1922.
 SPENCER B. NEWBERRY, President and Manager, Sandusky Cement Co., Cleveland, O. Died November 28, 1922.
 ALFRED ARNOLD REMINGTON, Consulting Automobile and Mechanical Engineer, New Eldon Chambers, Cherry St., Birmingham, England. Died July 25, 1922.
 C. J. TAGLIABUE, President, C. J. Tagliabue Manufacturing Co., 18 Thirty-third St., Brooklyn, N. Y. Died November 2, 1922.
 W. R. WALKER, Assistant to President, United States Steel Corporation, 71 Broadway, New York City. Died December 20, 1922.

A.S.T.M. Standards Recognized

Two recent instances of signal recognition given to A.S.T.M. standards will be of interest to our members.

The Recommended Minimum Requirements for Small Dwelling Construction, recently issued by the U. S. Department of Commerce as the report of its Building Code Committee, contain many references to A.S.T.M. standards and tentative standards. The Society's requirements for cement and lime are specified, but the specifications for brick depart in some respects from A.S.T.M. requirements for reasons that are explained. The following reference to quality of engineering materials should be gratifying to every member:

"Standard specifications for the quality of a number of structural materials have been adopted by the American Society for Testing Materials. These specifications are the result of long and thorough investigation and represent the agreement of manufacturers and producers as to the standards of quality necessary for practical successful results. They are intended for incorporation in working agreements of all sorts and under any conditions, and are therefore especially to be recommended for the general purposes of building codes."

Following this statement is given a list of twenty-one standard and tentative specifications of the Society covering commonly used building materials.

The Specifications for Steel Railway Bridge Superstructure recently recommended by a committee of the American Society of Civil Engineers include in full the A.S.T.M. Standard Specifications for Structural Steel for Bridges (A 7-21) and for Structural Nickel Steel (A 8-21).

Czechoslovakia Interested in Society's Work

An interesting communication has been received from the Masarykova Akademie, Prague, Czechoslovakia, requesting permission to translate certain portions of our standards and tentative standards for use in that country. Through the Czechoslovak Legation at Washington, we have been informed of the desire of Czechoslovakia to keep in the closest possible touch with American engineering standards and practices. Two paragraphs from the letter are of interest:

"We shall endeavor, in general, to devise standards that will be, as far as possible, uniform internationally, although, on the other hand, it is impossible to avoid some differences, which result from the character of materials and from the requirements which are specified in different states.

"Your publications are excellently arranged; it is impossible to find another example of such an extensive, highly specialized work, steadily pursuing its aim, and resulting from the cooperation of so many prominent collaborators."

The Czechoslovak Association for Research and Testing Materials and the Ministry of Public Works hold membership in the Society.

Distribution of Society Publications

The distribution of the 1922 Proceedings, Vol. 22, Parts I and II, was completed early in January. Any member who may not have received his copy of these two volumes is requested to notify the Secretary-Treasurer at once.

We regret to announce that the publication of the Index of Proceedings, Vols. XIII to XX (1913-1920) has been seriously delayed. It is now expected that the Index will be distributed about March 1 to all who have ordered copies.

List of Publications

Proceedings, Volume 22 (1922).—The PROCEEDINGS for 1922 in two parts: Part I, committee reports with discussions and new and revised tentative standards (1023 pp.); Part II, technical papers with discussions (591 pp.). Prices to non-members: paper \$12, cloth \$13, half-leather \$16. To members for extra copies: \$7, \$8 and \$11, respectively.

Book of A.S.T.M. Standards.—Issued triennially. The 1921 edition (890 pp.) and the 1922 supplement (54 pp.) contain the 172 standards adopted by the Society. Prices to non-members: cloth \$11, half-leather \$12.50. To members for extra copies: \$8 and \$9.50, respectively.

Supplement to Book of Standards.—The twelve 1922 standards, forming the first supplement to the 1921 Book of A.S.T.M. Standards, are issued in a pamphlet of 54 pages. Price to non-members: \$1.25. To members for extra copies: \$1.

Book of A.S.T.M. Tentative Standards.—The 1922 edition (774 pp.) contains 163 tentative standards issued by the Society. Prices to non-members: paper \$7, cloth \$8. To members: \$4.50 and \$5.50, respectively.

A List of Alloys.—A List compiled by William Campbell for Committee B-2 on Non-Ferrous Metals and Alloys (30 pp.) containing the compositions of over 1500 alloys. For single copies, \$1.00; in lots of five or more, 85 cents per copy.

Separate Standards and Tentative Standards.—Separate copies of all standards and tentative standards are available. The price is 25 cents for a single copy and in lots up to 50. Larger quantities are furnished at lower prices.

Complete Sets of Proceedings from 1902 to 1922, inclusive (with the exception of Vols. I and III). Special prices are made to members for extra copies and for complete sets. Binding in paper, cloth or half-leather.

Index to Proceedings, Vols. XIII to XX.—An index to the Proceedings for the years 1913 to 1920, inclusive (about 225 pp.), containing both an author and subject index of the committee reports and technical papers including the discussions. Prices to non-members: cloth \$2.50, half-leather \$3.50. To members: cloth \$1.75, half-leather \$2.75, respectively.

Miscellaneous.—Volume of annual reports of Committee D-1 on Preservative Coatings for Structural Materials for the years 1903-1914 (567 pp.). Price, \$5.00 in cloth.

Progress Report of Joint Committee on Specifications for Concrete and Reinforced Concrete (1921). Price, \$1.50.

Inquiries and orders should be directed to:

AMERICAN SOCIETY FOR TESTING MATERIALS
 1315 Spruce Street, Philadelphia

A.S.T.M. Committee Activities

Space in the BULLETIN is reserved for items of interest about committee activities. Officers of committees are invited to prepare information of suitable character for publication. A schedule of committee meetings for three months in advance will be published in each issue.

Committee C-9 on Concrete Plans Extensive Program

Committee C-9 on Concrete and Concrete Aggregates is endeavoring to increase its activities in the development of urgently needed specifications and methods of test for concrete and concrete aggregates. To this end there has been some reorganization of its sub-committees, and a plan evolved of encouraging the progress of the work by a limited amount of publicity through the A.S.T.M. BULLETIN. Accordingly a brief statement of the present status of the sub-committees' problems and the line of work which is planned is presented herewith:

Sub-Committee I on Definitions, L. R. Ferguson, Chairman: The work of this sub-committee is largely in connection with the representation of C-9 on Committee E-8 on Nomenclature and Definitions. Its particular task is that of harmonizing certain definitions proposed by the Joint Committee on Concrete and Reinforced Concrete, and differing from those recommended by Committee C-9.

Sub-Committee II on Laboratory Tests for Concrete and Laws of Mechanical Mixtures, D. A. Abrams, Chairman: This sub-committee has been active in the past in gathering data on which to base theories of proportioning concrete mixtures, and a number of its members have participated generously and extensively in research for this purpose.

A summary of results of the extensive program of work carried out jointly by Sub-Committees II and VI was presented in the report of the committee presented at the annual meeting in 1922, but the analysis of these results has not yet been made. It is planned to put the data in the hands of a competent analyst this year, the members of Sub-Committees II and VI to act as a reviewing board.

Sub-Committee III on Sampling and Testing Field Concrete, R. S. Greenman, Chairman: This sub-committee is undertaking the investigation of the value of transverse tests for field purposes, and the relative strength of different size cores as taken from the finished structure. The latter problem is important not only from considerations of economy, but also in the establishment of reduction factors whereby the strength of any field specimens may be properly interpreted in terms of the strength of a specimen of standard dimensions.

Sub-Committee IV on Relative Values of Various Strength Tests, L. N. Edwards, Chairman: At the present time, problems such as the value of tests of sands in mortars to determine their suitability for use in concrete, are before this sub-committee. The sub-committee also has a direct interest in the problem before Committee C-1 on Cement of whether the tension test of mortars should be abandoned in favor of the compression test.

Sub-Committee V on Impurities Affecting Fine Aggregates, D. A. Abrams, Chairman: The general extension of the work to include studies of deleterious ingredients of any kind has been authorized. A great deal of work has been done in the study of effects of impure waters used in mixing concrete, and the results of this work will be available in the near future.

Sub-Committee VI on Methods of Tests for Voids, Weights, Density, Specific Gravity, and Consistency, A. T. Goldbeck, Chairman: The sub-committee will devote its attention to methods of determining consistency, which is undoubtedly one of the most important factors to be controlled in the testing of concrete. The flow table in particular will be studied in different laboratories, to see what uniformity of results can be obtained by different operators using the same type of table.

Sub-Committee VII on Methods of Tests for Coarse Aggregates, F. E. Giesecke, Chairman: Mr. Giesecke has very recently been appointed chairman of this sub-committee in recognition of work that he has been doing in connection with the strength and other properties of coarse aggregates. A great deal of data is in the possession of the committee, which ought to furnish the basis for specifications and methods of test.

Sub-Committee VIII on Available Aggregates for Concrete, H. S. Mattimore, Chairman: The field of this sub-committee has not been very clearly defined in the past. It appears that the mere tabulating of aggregate deposits on which no data are available regarding quality should not be the function of this sub-committee, but that the listing of those materials which have been tested by reliable organizations will serve a useful purpose.

Sub-Committee IX on Specifications for Fine Aggregates, R. B. Young, Chairman: Important as specifications of this sort are, there has been much reluctance to set down absolute requirements for fine aggregates because the direct test of such aggregates in concrete is a slow and expensive process. The indirect tests are still in dispute, and in view of this fact the committee is preparing for presentation at the next annual meeting of the Society a tentative specification and also a review of the present methods of judging the values of a fine aggregate.

Sub-Committee X on Specifications for Concrete, L. W. Walter, Chairman: This sub-committee plans to draft an outline of general specifications for concrete, with particular attention to those portions of the specifications where more information is needed. The sub-committees concerned, and possibly other agencies, will be urged to develop such information, in order that the general specifications may be gradually strengthened and improved.

Sub-Committee XI on Admixtures, J. C. Pearson, Chairman: This sub-committee has made a limited study of accelerators during the past year, and the results obtained from a number of cooperating laboratories will be embodied in a report to be presented at the next annual meeting of the Society. Studies of various admixtures in concretes and their effects on such properties as workability, strength, permeability, etc., will be made.

Sub-Committee XII on Conditions Affecting the Durability of Concrete in Structures, P. J. Freeman, Chairman: This recently organized sub-committee will devote special attention to cases of deterioration and failure in concrete which may be brought to its attention. In so far as possible these cases will be diagnosed and the causes of the trouble ascertained. It is hoped that the committee may have access to much unpublished information and without violating confidences, will be able to derive general conclusions of great value from such information.

Sub-Committee XIII on Elastic Properties of Concrete: This is a new sub-committee yet to be organized. Important developments from studies of fatigue in concrete, which were discussed at the annual meeting, led to the fact that none of the existing sub-committees were concerned with the elastic properties. This sub-committee will be organized at the next meeting of the committee, which will be held on February 8.

Sub-Committee on Plate Tolerances Organized

Sub-Committee XX on Tolerances, of Committee A-1 on Steel, was formally organized at a meeting held at the Society's headquarters on Friday, January 12, 1923. The tentative personnel of the sub-committee was announced in BULLETIN No. 7, October, 1922. Since then the Atchison, Topeka and Santa Fé Railway, the Cambria Steel Co. and the Otis Steel Co. were added to membership, and at the meeting the personnel was further enlarged by the election of the Bureau of Engineering, U. S. Navy, and the Inland Steel Co., making a total membership of eleven producers and thirteen non-producers.

It was agreed that consideration of the subject in the sub-committee should be under the following eight headings:

1. Extension of the present tables for plates over 144 in. wide.
2. Possible revision of the present weight table as applied to ship plates.
3. Possible revision of the present table for flange plates.
4. Possible revision of the present tables for fire box plates.
5. Possible revision of present tables for structural plates.
6. Question of a maximum gage for firebox plates.
7. Tolerances for circular and sketch plates.
8. Question of the application of the tables to individual plates.

Two sub-sub-committees were appointed. One committee is to review the situation with respect to plates up to 144 in. in width and to report a recommended program to the sub-committee. The second, which contains the producers of plates 144 in. and over in width, is to consider the situation in regard to the collection of data leading to the establishment of a table of overweight tolerances for such plates, and to report their recommendations to the sub-committee.

Schedule of Committee Meetings

DATE	COMMITTEE	PLACE
February 5	D-9 on Insulating Materials	New York City
February 8	C-9 on Concrete and Concrete crete Aggregates	Philadelphia
February 9	Sub-Committee, of Committee A-3, on General Castings	Philadelphia
February 15	C-8 on Refractories	Pittsburgh
February 15	Sub-Committees of Committee E-1 on Methods of Testing	Philadelphia
February 16	C-2 on Reinforced Concrete	Philadelphia
February 16	E-1 on Methods of Testing	Philadelphia
February 21	C-4 on Clay and Cement Sewer Pipe	New York City
March 1	D-5 on Coal and Coke	Philadelphia
March 2	E-8 on Nomenclature and Defi- nitions	Philadelphia
March 7, 8	Sub-Committees of Committee A-1 on Steel	Philadelphia
March 9	A-1 on Steel	Philadelphia
March 21	A-2 on Wrought Iron	
March 30	D-2 on Petroleum Products and Lubricants	New York City
March 30	D-11 on Rubber Products	New York City
March	A-4 on Heat Treatment of Iron and Steel	
March	C-11 on Gypsum	
March	D-7 on Timber	Chicago
March	D-13 on Textile materials	
March	D-14 on Screen Wire Cloth	
April 3	D-1 on Preservative Coatings	
April 6	C-6 on Drain Tile	Chicago
April 10	Executive Committee	Philadelphia
April 25	A-5 on Corrosion of Iron and Steel	Philadelphia
April	B-2 on Non-Ferrous Metals and Alloys	
April	B-3 on Corrosion of Non-Fer- rous Metals and Alloys	
April	C-4 on Clay and Cement Sewer Pipe	
April	D-8 on Waterproofing Materials	
April	E-4 on Metallography	

Committee A-1 on Steel.—The following sub-committees of Committee A-1 on Steel held regularly scheduled meetings at the Society's headquarters on January 11 and 12: Sub-Committees I on Rails, II on Structural Steel for Bridges, etc., III on Structural Steel for Ships, IV on Spring Steel, VIII on Steel Castings, IX on Steel Tubing and Pipe, XIII on Methods of Testing, and XX on Plate Tolerances.

Mr. A. W. Carpenter has been elected to the chairmanship of Sub-Committee II on Structural Steel for Bridges, Buildings and Rolling Stock, to succeed Mr. F. E. Abbott.

Capt. T. G. Roberts of the Bureau of Construction and Repair, U. S. N., was elected chairman of Sub-Committee III, to succeed Capt. W. J. Baxter, who has retired from the Navy service and who resigned the chairmanship.

Sub-Committee IX held a well-attended meeting to discuss the preparation of a specification for oil country tubular goods. Representatives of oil producers, including the American Petroleum Institute and the Mid-Continent Gas and Oil Association, were present. A tentative specification was drafted and a representative sub-sub-committee will be appointed to continue the development of the specifications.

Committee A-4 on Heat Treatment of Iron and Steel is cooperating with the Society of Automotive Engineers and the American Society for Steel Treating in the formulation of definitions relating to heat treatment. A joint committee has been organized, the A.S.T.M. being represented by Mr. R. M. Bird, a member of Committee A-4.

Committee C-3 on Brick is taking up the question of changes in our present specifications for paving brick. Revised specifications have been drawn up, but it is probable that no definite action will be taken until after the meeting of the Permanent Committee on Recognized Sizes and Varieties of Paving Brick, of the U. S. Department of Commerce.

It is also engaged in securing further data on the properties of concrete brick. Plans are under way for the procuring

of such data at the Lewis Institute Materials Research Laboratory.

During the past few months Committee C-3 has addressed letters to about eighty city engineers throughout the United States, requesting that they transmit criticisms or suggestions which will make the brick specifications applicable to their particular problems. Responses were not as conclusive as it was hoped they would be, and it would appear that a decided effort should be made to bring the specifications of the A.S.T.M. before those who are using brick, and suggestions are welcome which might prove effective to this end.

Committee C-4 on Clay and Cement Sewer Pipe has placed a number of problems in the hands of sub-committees for consideration as follows:

Sub-Committee I on Sampling and Physical Test Requirements is considering the practicability of testing pipe at the place of manufacture.

Sub-Committee II on Chemical Requirements is considering the need for including chemical requirements in specifications, both for clay and cement-concrete sewer pipe, especially where the pipe is to be used in sewers where conditions are more or less harmful to the materials of which the pipe is made.

Sub-Committee IV on Methods of Testing is giving consideration to the methods of testing pipe that will be required should chemical requirements be found necessary.

Committee C-6 on Drain Tile held a meeting in Chicago on January 19, at which reports were received on the following subjects:

Standardization of Drain-Tile Sizes.

Deterioration of Concrete in Alkali Soils.

Test Methods for Determining the Durability of Concrete in Alkali Soils.

Experiments being made by Lewis Institute and the Concrete Pipe Association on the "Resistance of Concrete to Soil Action."

Discussion was had on the absorption of concrete pipe and on the farm-tile classification of drain tile which may result in some action being taken on these subjects at the next meeting.

Committee C-11 on Gypsum held a meeting in Washington on October 26 and 27, 1922. At this meeting a paper was presented by J. Miller Porter on "Volumetric Changes of Gypsum," covering a study undertaken to see if some light could not be thrown on the cause of plaster failure where gypsum plaster has been applied to a concrete base, on the assumption that the rupture of bond between the gypsum plaster and the concrete was due to the differential expansion of the gypsum and the concrete.

Sub-Committee IV on Testing Methods presented an interesting report on consistency tests made on stucco and retarded sand plaster. The sub-committee also reported on certain revisions that should be made in the Tentative Methods of Testing Gypsum and Gypsum Products (C 26-21 T).

The committee is giving consideration to specifications for gypsum tile or block for use as a building unit in non-bearing construction in the interior of buildings.

Committee D-2 on Petroleum Products and Lubricants held a meeting at St. Louis on December 5, 1922. Two new sub-committees were authorized: a Sub-Committee on Nomenclature under the Chairmanship of Mr. K. G. Mackenzie, and a Sub-Committee on Crude Petroleum under the Chairmanship of Mr. N. A. C. Smith.

The committee is keeping in close touch with the standardization projects of the British Institution of Petroleum Technologists. The Institution holds membership on Committee D-2, being represented by Mr. A. Duckham.

Committee D-7 on Timber held a well-attended meeting in New York City on January 16, to consider principally the grading rules suggested in the report of the Central Committee on Lumber Standards, to which reference is made elsewhere in the BULLETIN. Comparisons will be made of the suggested grading rules with A.S.T.M. specifications and definitions. The committee decided to advocate a change

in the names of the four grades of structural timbers so that the purpose of each grade or its most prominent use would be brought out in the name of the grade. The committee approved the basic rules for structural timbers as the fundamental plan of strength grading, it being understood that these grades deal only with defects and not the quality of the wood in any grade.

Certain suggested revisions in the Tentative Methods of Testing Small Clear Specimens of Timber were approved, but action to make the tentative method standard was deferred to give the Sectional Committee of the American Engineering Standards Committee on Methods of Testing Wood an opportunity to offer criticisms and comments.

Committee D-8 on Waterproofing Materials held a meeting in New York on January 24 at which consideration was given to a number of revisions of the present specifications and methods of test for waterproofing. It also gave consideration to several new tentative specifications covering felted fabrics, woven cotton fabrics and burlap, saturated with bituminous substances, for use in waterproofing.

Committee D-9 on Electrical Insulating Materials, at a meeting held in New York on November 10, gave consideration to a modification of the present Tentative Method of Test for Phase Difference of Molded Insulating Materials at Radio Frequency (D 150-22 T) so that the methods will apply to sheet insulating materials as well. Consideration was also given to a method of making high voltage tests on molded insulating materials at radio frequency. Some cooperative impact tests are being made on different types of molding materials. Test specimens are being distributed to the Ohio Brass Co., Brooklyn Navy Yard Laboratory, U. S. Bureau of Standards and the Western Electric Co., and tests with the Izod or the Charpy impact testing machines will be made.

Work is also being conducted on methods of testing untreated papers, this being carried on in cooperation with a committee on paper of the Technical Association of Pulp and Paper Industries, which latter committee has done considerable work on methods of determining the characteristics of paper.

Committee D-11 on Rubber Products, at its meeting held in New York on November 14, 1922, gave consideration to a number of revisions of the present tentative specifications for hose and belting. It is contemplating the preparation of a new specification for cold water hose for ordinary purposes.

The appointment of a new sub-committee on Performance Tests was authorized, under the chairmanship of C. R. Boggs.

Committee D-15 on Thermometers was requested by Committee D-2 on Petroleum Products and Lubricants to prepare specifications for thermometers for use with the Saybolt viscosimeter. Such specifications were prepared by the committee at its meeting held at the Society's headquarters on January 23. Another piece of work that has been accomplished is the preparation of a standard form of thermometer specifications. The requirements for thermometers scattered throughout the various A.S.T.M. standards and tentative standards have not been entirely consistent as to form and arrangement, and the committee believes that a standard form is very desirable. The form prepared at the January meeting will be submitted informally to the various standing committees concerned for comment.

Committee E-1 on Methods of Testing will hold a meeting at the Society's headquarters on February 16, 1923, at which time the work before the several sub-committees will be reviewed. Committee E-1 has at present the following active sub-committees:

A Sub-Committee on Volatility, which is carrying out some collaborative distillation tests on various oil products, looking toward the unification of the several distillation tests of the Society.

A Sub-Committee on Water in Bituminous Materials, which has developed a test for determination of water in bituminous materials to replace the three tests now in the books of the So-

ciety. This test has already been approved by one of the standing committees concerned and is before the other two standing committees concerned for action.

A Sub-Committee on Revision of Methods of Testing E 1-18. This sub-committee is now engaged in the formulation of standards for tension test specimens and for procedures for tension testing. It is also giving further study to those portions of the Standard Methods of Testing dealing with definitions relating to methods of testing and with the verification of testing machines. These two subjects are covered in the appendices to the Report of Committee E-1 for 1922. The definitions were taken up with Committee E-8 on Nomenclature and Definitions and some revisions, suggested by that committee, will be discussed at a meeting of the sub-committee to be held at the Society's headquarters on February 15, at which time the other subjects mentioned above will also be given consideration.

A Sub-Committee on Consistency, appointed to study various methods for measuring consistency and allied properties, is now engaged in formulating definitions for the several properties under the jurisdiction of the sub-committee.

In addition to the sub-committees mentioned above, the appointment of a Sub-Committee on Impact Testing was authorized at a meeting of the Advisory Committee of Committee E-1 held at the Society's headquarters, November 17, 1922. This appointment was the outcome of the discussion on impact testing that developed during the presentation of the Symposium on Impact Testing held at the recent annual meeting. The sub-committee will hold its organization meeting at the Society's headquarters on February 15. It will be under the chairmanship of Mr. E. B. Smith of the U. S. Bureau of Public Roads, Washington, D. C., and will have the following as a nucleus committee:

E. H. Dix, Jr.	T. D. Lynch	E. B. Smith
W. H. Fulweiler	D. J. McAdam, Jr.	H. L. Whittemore
F. C. Langenberg		

In addition to these, the committee will have in its personnel the representatives of the standing committees interested. The sub-committee will study impact from a fundamental standpoint and will not expect to prepare methods of test immediately, but rather to study the question as to what an impact test means.

Committee E-8 on Nomenclature and Definitions is giving consideration to a number of the tentative definitions of the Society. Many of these definitions were referred back to the standing committees concerned with suggestions for rewording the definitions. Some of these suggestions have already been acted upon favorably by the standing committees.

At a meeting of the Advisory Committee of Committee E-8, which was held in New York City on November 24, the appointment of a sub-committee on the terms Sieve and Screen was authorized. The Society now has standard definitions for the terms Sieve and Screen as prepared by Committee D-4, but upon receiving advice from Committee C-9 that the definitions as they now appear are not entirely satisfactory to all the standing committees concerned, the above sub-committee was organized under the Chairmanship of Mr. L. R. Ferguson, the representative of Committee C-9 on Committee E-8.

A Sub-Committee on Specific Gravity has prepared definitions for specific gravity and has made a number of recommendations to Committee E-8 relative to the use of the term with the suggestion that these be transmitted to the standing committees of the Society as definite recommendations of Committee E-8. The report of the sub-committee containing the suggested definitions and recommendations has been transmitted to all the standing committees of the Society for discussion.

A Sub-Committee originally appointed to consider definitions for the terms Moisture and Ash, as presented by Committee D-6 on Coke, has now before it definitions for the terms Fixed Carbon and Volatile Matter in addition to the terms which were originally assigned to it.

A Sub-Committee on Sand has prepared a definition for this term and it is expected that this definition will be referred to the standing committees interested for their advice as to its acceptability.